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ABSTRACT

One of a series devoted to career education in transportation, this teachers' guide, which is a revised edition of a guide issued in 1974, covers the planning, implementation, and evaluation of programs in transportation career education and provides forms to be used in these three processes. The most important principles in program planning are outlined, followed by a descriptive checklist on career education program planning. Directions are then given to plan for program implementation. A separate section covers the planning of individual units (parts of the program distinctive enough to have their own well-defined objectives) in career education. It suggests that the teacher first determine the unit's objectives and then prepare a unit work plan. Two types of evaluation are discussed for the units and program: formative evaluation, which is conducted as the program develops and initiates adjustments in response to specific observations and recommendations, and summative evaluation, which is undertaken upon conclusion of the entire program or of its individual units. To aid in this evaluative process, several lists are provided, outlining the major factors to be considered in such areas as basic program effectiveness, reasonableness of expectations for the program, and media and materials evaluation. (The Transportation Curriculum Project requests that copies of program evaluations be sent to it as part of its efforts to evaluate and modify its materials in this series.) (ELG)

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ED159313

AN IMPLEMENTATION GUIDE

FOR

INTERMODAL TRANSPORTATION CAREER EDUCATION

REVISED EDITION

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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PLANNING

FOR

THE IMPLEMENTATION AND EVALUATION

OF

INTERMODAL TRANSPORTATION CAREER EDUCATION

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Part One

INTRODUCTION

INTRODUCTION

This guide to the planning, implementation and evaluation of programs in transportation career education is a publication of the Transportation Curriculum Project of the Division of Vocational Education, Ohio Department of Education.

In 1974 the Transportation Curriculum Project issued a similar publication (An Implementation Guide for Intermodal Transportation Career Education). The focus of that guide was upon the many different units which could be utilized in a career education program. Included in it were 35 units involved with career orientation, 36 units involved with career exploration, and 30 units involved with career preparation.

The scope of this particular guide is very different. The emphasis here is upon the planning of career education programs, the planning of the units that make up such programs, and the evaluation of both programs and units. Thus, this guide is not a revision of the previous publication of the Transportation Curriculum Project but rather, an entirely new publication fulfilling a role complimentary to it.

A particularly important feature of this guide is that it includes forms to be used in undertaking various aspects of transportation career education. These forms are to be used for program planning, planning for individual units, evaluation of units, and evaluation of a program or any major component of it.

The Transportation Curriculum Project has already issued other publications dealing with career education and its different phases, curriculum guides related to these phases, and student-oriented materials based on the curriculum guides. It is assumed that you will have access to these materials.

In referring to programs in this guide, we mean any course or sequence of units which has been accorded a place in the curriculum and to which definitely established credits are assigned. In schools where the term program is used as the equivalent of a sequence of courses, the concept of a unit as used in this guide should be replaced by the concept of a course. As used in this guide, units are elements of the program important enough to justify being individually identified and accorded their own objectives and other descriptive elements.

Throughout this manual it is stressed that you cannot develop this kind of program without a great deal of help from other people. You should begin to seek the involvement,

cooperation and help of others at the very outset of any program --- even as you begin to conceptualize it and well before its implementation.

The involvement of parents is especially important to the success of any program of this kind. But this is only the beginning of "community involvement." One should also cultivate the goodwill, support and involvement of the state or local employment service, transportation industry officials (for instance, personnel officers, specialists in various fields, training officers, etc.), union officials and others.

Good luck in all your activities in transportation career education. The Transportation Career Project will be interested in hearing of everything you do in this regard.

Part Two

PLANNING THE IMPLEMENTATION OF A PROGRAM

PART TWO: PLANNING THE IMPLEMENTATION OF A PROGRAM

This section is made up of three parts. One summarizes the most important principles to keep in mind in planning any career educational program. The second provides you with a descriptive check list of literally every item you need to consider as you plan such a program. The third provides you with format sheets that you can use to plan your own program.

THE MOST IMPORTANT PRINCIPLES IN PROGRAM PLANNING

The following are among the most important points to keep in mind as you plan your program:

1. Be as specific as possible.

In the format sheets that follow, it will be relatively easy to write broad generalizations. To be more specific will require careful thought, double checking about matters of uncertainty, and more scrupulous attention to being completely realistic. However, only by requiring yourself to be as specific as possible in responding to each item will you provide yourself with a plan the probability of success for which can be realistically assessed.

2. Consider every necessary item.

In the descriptive check list included in this section --- and in the format sheets as well --- we have suggested almost every conceivable item that you will need to consider as you develop your program. Probably the most serious problem encountered in program planning is that we overlook certain matters which can have marked effect on the success or failure of the undertaking. Since the check lists provided here are so very detailed, you may be tempted to skip some of these items, making the too hasty assumption that they will be of little or no importance to your program. But in the average program, each of these items will be of some importance, and each should be given serious consideration.

3. Give high priority to establishment of program objectives.

All too frequently the major factor involved when an effort at program planning collapses is the poor or inappropriate selection of objectives. The identification of your general program objectives deserves priority, not only in terms of being done early but also in terms of the amount

of time allocated to it. There is considerable discussion in this guide of the identification of program and unit objectives, reflecting the attention this both deserves and requires.

4. Be realistic about resources.

Especially with programs for which we ourselves have real enthusiasm, it is very easy to allow this enthusiasm to lead us into over-estimating the resources that will be available to us. Matters about which we may be most likely to do this will include financial resources, space allocation, the time commitments of other people, and the support services expected of outside agencies or organizations. We should work very hard to obtain the allocation of all needed resources --- but we should not deceive ourselves over the extent to which any of this will be available.

5. Be realistic about all boundaries.

Among the definite boundaries which exist for any educational program are those of available time, space, and so on. It is important that we observe reality in connection with these as we develop a program, since otherwise one objective after another will prove untenable as the program is undertaken.

6. Plan for program flexibility.

There is nothing at all sacred about a program plan, and, in fact, it is very likely that adjustments, modifications or other changes will be indicated for it as it develops. To ensure that the program does not become too locked into what is contained in the plan for it, provisions for flexibility should actually be built into the program plan itself. Probably the two most successful ways of ensuring this are: (1) Provide a regular schedule of review sessions. It should be clearly understood that a major function of these sessions is to make any required or desirable adjustments to the program plan. (2) Provide for regular feedback --- from students, faculty, advisers, and so on. Again it should be understood that a major function of such feedback is to indicate needed changes.

7. Include alternatives.

In any program emergencies will arise because planned-for resources, materials, media or even strategies turn out to be unavailable. Sometimes these emergencies can all but sink or, at least, curtail a program. But many of them can be anticipated; we are apt to have some awareness of where such emergencies are most likely to arise. Therefore, at least in a general way, alternatives should be identified

in any educational plan.

8. Identify the relationship of this program to other programs.

A major weakness in much program planning is that it occurs very much in a vacuum. Too little attention is given to how the program can relate to, tie in with, or supplement other programs. As a result, much valuable support for the program may be lost and needless conflicts may even develop. Undoubtedly the best protection against this is to carefully think through all possible relationships with other programs.

9. Plan for accountability.

Any program is required to justify itself from time to time. Your program planning should take this into account and should make very concrete provisions for it. Basic to any accountability is a plan for systematic record keeping. The contents of these records should be carefully planned, so that they will contain the kinds of data required to factually display at any moment what the program is doing and what it is not doing. One of the most perplexing difficulties that arises in program management is how to acquire data after-the-fact when one has not kept a day-to-day record of such matters. If adequate planning for accountability has been done this is not necessary.

10. Provide for planning review.

The planning stage should include identification of all administrators, committees and other persons or groups who should review major components of the plan itself. The advantages of this will be obvious, especially in terms of time and energy saved relating to program elements that may be matters of controversey or disagreement.

11. Plan for regular program evaluation.

There is an entire section of this guide devoted to the subject of evaluation. This is either formative (undertaken at various points in the development of the program --- say at the end of each unit) or summative (undertaken at the end of the program itself or as major sections of it are completed). Unfortunately, evaluation is too frequently seen as involving only review conferences, at which participants share their feelings about what has occurred in the program. While there is a need for such conferences, they cannot by any means constitute an effective program of evaluation. In the planning process careful consideration should be given to what data will be required in order for adequate evaluation to be conducted to establish whether program objectives

have been met. Once these information needs have been established, the kinds of evaluation necessary to acquire required data can be determined. All of this should be decided in the planning stage.

12. Identify program follow-up and carry-over.

No program ends with itself. There is always carry-over to other programs, independent follow-up of program activities by participants, and various kinds of school or co-munity involvement that is maintained. The kinds of program follow-up most likely to occur should be at least tentatively identified in the planning process. Only in this way can program planning take into account all possible outcomes of the program.

It often has been said that basic to the success of any important undertaking is the planning that goes into it. This is worth repeating here because planning can be an exhausting, complex and sometimes even frustrating process. However, in the last analysis, usually the more careful planning, the more worthwhile, successful and rewarding results that will occur.

A DESCRIPTIVE CHECK LIST FOR PROGRAM PLANNING

This is a check list for you to use in planning any career education program. There are explanations given for each item cited, with certain items being discussed in considerable detail.

Before you use this check list to develop your program, it is assumed that certain preliminary planning will have already been accomplished: for instance, the need for the program will have been established, the program will have been named, the general scope of the program will have been outlined, and the general program objectives will have been established.

NAME OF THE PROGRAM: This deserves careful attention, since, among other things, it can have a great deal to do with the acceptance the program will receive.

CONCISE PROGRAM DESCRIPTION: You will need to provide this to others at several points in the development of the program, and it will eliminate confusion if you have a standard version that you use. This should consist of no more than five or six sentences. There is a well-known adage that even with the most complex project, you have not thought it through carefully enough if you cannot summarize it in a half dozen sentences.

ADMINISTRATOR AND PARTICIPATING FACULTY: To the greatest extent possible, all of these people should be identified very early in the planning process, so that they can participate in the development of the program.

COMMITTEES REQUIRED: The same will be true with any advisory or other committees required for the program.

ACADEMIC CREDITS INVOLVED: This is another matter about which a relatively early decision will be required, since it can have considerable influence upon how much the program can both include and accomplish.

GENERAL OBJECTIVES: This should be one of the first items identified in the planning of your program.

When you develop program objectives, you should attempt to ensure that:

1. All desired outcomes are measurable;
2. These outcomes can be readily understood by --- and will be considered important by --- the students involved;
3. It is possible for these students to achieve these objectives;
4. Identified resource materials are accessible to students and relevant to the achievement of unit objectives;
5. Program objectives are consistent with the unit objectives; unit objectives are consistent with program objectives; and all these objectives provide continuity from one unit to another;
6. Objectives are consistent with --- and are seen as logical outcomes of --- identified learning strategies;
7. Ancillary and support services --- counseling, vocational guidance, etc. --- are expressed in realistic terms and reflect the true involvement expected of such personnel;
8. Community involvement is expressed in terms of services that are relevant, realistic and available;
9. Achievement of outcomes is possible within the designated time frames;
10. These objectives are in accordance with current information about the involved careers.

STUDENTS TO BE SERVED BY THE PROGRAM: When planning a program such as this, it is important to identify the kinds of student who will be involved, especially in terms of the in-general educational background, prior experience with the contents of this program, and general interest in this field.

STUDENT PREREQUISITES: If there will be certain requirements established for students entering the program, these should be identified as early as possible in the planning process.

APPROVALS REQUIRED: Almost any new program requires administrative approval, sometimes at more than one level. While you may not formally seek such approvals until much planning has already been accomplished, you should be aware very early exactly what approvals will be required and from what sources. You may also find it helpful to identify persons whose approval is not required, but whose informal approval may nonetheless be very helpful to the program.

RELATIONSHIP TO OTHER PROGRAMS: Unfortunately, this is one of the most overlooked elements in the planning of new programs. Not making such identifications can result in confusion, duplication of effort, and even much unnecessary conflict and interference. This is a matter worthy of really careful and early investigation.

DISSEMINATION OF PROGRAM INFORMATION: Early in your planning, identify those administrators and other persons who should be kept regularly informed of what is happening as the program develops. To ensure that this is actually carried out, prepare a schedule of when updated information about the program should be distributed to these people.

UNITS IN THE PROGRAM: At least a tentative agreement about major program units --- as well as their general scope and objectives --- should be reached before much other planning is undertaken.

TIME FRAMES: According to the nature of your program, the time involved may be a one or two week interval, a quarter, a semester or an entire academic year. Obviously this will also require a decision about whether your career education program will be a short independent unit, part of another course, part of an integrated curriculum with much broader objectives, or a curriculum unto itself.

PHYSICAL FACILITIES REQUIRED: These must be precisely identified, especially for certain group activities, laboratory set-ups, and other situations apart from the usual classroom arrangement.

COST ESTIMATES: This is another matter about which adjustments will have to be made in your written plan as the program develops. Nonetheless, it is one of those items about which you may have to answer questions at every stage in the planning process, and it is always well to have the best information available at any given time.

PROJECTED OUTSIDE SUPPORT: This is another matter where early identification can be most helpful.

MAJOR BOUNDARY ELEMENTS: You need to identify every possible factor that will provide a boundary or limit to

your program. These can include such factors as limitations on financial support, available faculty, available time, scheduling considerations, and so on. Too much time can be wasted over objectives or activities which are later discovered to be impossible due to one or another ot these boundary items. Thus, their early identification helps us use planning time to the greatest advantage.

MAJOR LEARNING STRATEGIES: These will be more fully outlined as you develop individual units in the program, but even when the program itself is being planned you should begin to identify the major kinds of learning strategies that will be most appropriate and useful.

In career education, learning strategies obviously should provide for both maximum school and community involvement. It is also important to remember that before you can most effectively assess how to use any particular resource --- whether an agency, expert person, film or whatever --- it will be necessary for you to learn a good deal about what this particular resource or person has to offer.

Obviously this is an area in which adjustments may be necessary, especially as the program gets underway and the faculty learns more about how the students involved learn most effectively.

RESOURCE IDENTIFICATION: The resources available in the school and community are varied. But the discovery of some will require careful and persistent investigation.

Among the resources which may require persistent investigation in order to discover the best sources of help are: members of the counseling staff who are most competent and willing to work with this career program; officials in the transportation industry, trade associations and unions who are most competent and willing to work with the program; worthwhile industrial and transportation centers; and the best possible films and other media.

Resources of this kind that the program can effectively utilize should be identified in the planning process and, whenever possible, specific organizations, agencies or persons who can serve in the required capacities should be identified.

COOPERATING AGENCIES/ORGANIZATIONS: Other agencies or organizations which can provide any kind of support ot assistance to the program should also be identified, even if their specific roles may not be determined until later.

OTHER COMMUNITY RESOURCES: In a transportation career education program, other community resources which may prove

of value can range from an airport to a regional planning group --- the latter often have transportation as one of their major concerns. Among those resources which you will wish to consider are: transportation centers, government agencies, educational organizations and agencies, trade organizations, chambers of commerce, regional or county or city planning groups, professional and technical organizations, transportation companies and services, labor organizations and unions, and natural resource agencies and organizations.

OTHER COMMUNITY INVOLVEMENT: Are there any other kinds of community involvement or support which will be necessary, useful or desirable? If so, they should be pinpointed during the planning process and the sources should be identified.

MEDIA/MATERIALS: Here is another item with which you will become engaged in more detail when you plan the individual units of your program. However, even when planning the program itself you will want to identify the major media items that will prove most useful, the other materials that will be needed, the uses to which all such materials will be put, and the most helpful sources of them.

When considering this item, you should also identify the equipment you will require for the program: projectors, audio equipment, television equipment, books, magazines, duplication equipment, and so on.

INDEPENDENT STUDENT ACTIVITIES: This is another area where detailed planning will await the development of the program units, but even at this stage some identification of independent learning activities in which students may engage will be helpful.

REQUIRED EXTERNAL REPORTS: The planning process should involve an identification of all the reports which the program must produce during any academic year, along with a schedule of when these are required. This is a more important point than it might appear, since planning must also ensure that the necessary data are available at the times that these reports must be prepared.

REQUIRED INTERNAL REPORTS: Especially if this is a program involving several faculty members, counselors or other staff, it may be necessary to generate certain internal reports in order to produce the required external reports. A schedule for these internal reports which supports the schedule of external reports should be part of the planning process.

PROGRAM RECORDS: Records serve a variety of functions. What are the needs of record keeping for this particular

program? What kinds of records will best meet these needs? A program for systematic record keeping is a required part of any planning process.

EVALUATION OF STUDENT PERFORMANCE: You will need a plan for evaluation of student performance. The planning process also should create a schedule reflecting when each part of this will be accomplished.

PROGRAM REVIEW AND EVALUATION: The matter of exactly what should be reviewed, what should be evaluated, how each of these should be undertaken, and what use should be made of the results deserves very careful thought. A later section of this guide deals with both program and unit evaluation and provides forms that can be used for this purpose. A concise statement as to exactly when and how each stage of this will be accomplished is an integral part of the planning for any career education program.

STUDENT FEEDBACK: Obviously this is an important part of any plan for review and evaluation. However, it may be sufficiently different from other aspects of review and evaluation to deserve a plan and schedule of its own.

PROGRAM FOLLOW-UP: Will students in this program have the opportunity to move onto other programs of a related kind? Will they wish to enter the labor market? Will they at least want to continue their contacts with certain industrial concerns, traffic centers or other community resources?

Whatever follow-up will be desirable requires planning. Even before the program is begun, the planning process should at least identify the kinds of program follow-up most likely to be in demand and also the most important ways of providing this.

OTHER IMPORTANT PROGRAM ELEMENTS: Each program is unique. It will involve certain elements not covered by the foregoing items. Thought should be given to aspects of the program which might fall into this category so they may be included in the planning process.

The items listed above will constitute your basic plan for any career education program. Periodically you will want to review this plan and whenever this occurs, certain items will remain as they are while others will require revision or updating.

However, usually the contents of this plan will be relatively stable, especially if the matters entered into it

have been carefully thought out and are the result of consultation with both the school and the community at large.

The following items also should be a part of any program plan, but usually they are entered on a page by themselves and apart from the other items. This is because these items will require regular updating and at any given time, will reflect only as-of-this-moment information:

SUMMARY OF PLANNING ALREADY ACCOMPLISHED: This should summarize the program planning that is complete. It should also reflect the necessary approvals and authorizations for the program that have been obtained.

SUMMARY OF PLANNING STILL TO BE COMPLETED: This should summarize the planning steps that still have to be accomplished, including approvals and authorizations yet to be obtained.

SUMMARY OF PROGRAM SHCEDULE: Since schedules are subject to frequent change, this item should be included here. It will consist of a concise summary, including dates, of the most important activities involved with this program.

PLAN FOR PROGRAM IMPLEMENTATION

At the point when you are in a position to complete most of the items in the program plan, there is yet one other summary which must be undertaken, since no program plan is complete without it. This is a detailed, step-by-step outline of how this plan is to be implemented.

When it is complete, this implementation outline should consist of some 24 to 30 steps. It need not run longer than about two typewritten pages, since each step should be outlined in a very concise way.

Usually it is a good plan to include with each item the date by which it will be accomplished.

Among the items usually included in an implementation plan are these: Plans for faculty orientation, student recruitment, presentations to community and industry groups or representatives, recruitment of industry and community involvement, curriculum implementation, orders for equipment and supplies, implementation of a program schedule, and program review and evaluation.

As you review the check list in the foregoing pages, other items essential to your program implementation plan

will also occur to you. Space is provided in the program planning form included in this guide for your implementation plan.

THE FORM TO USE IN PROGRAM PLANNING

Note: Items for which there is insufficient space may be completed on the reverse side of this sheet or on separate sheets.

PROGRAM PLAN

NAME OF PROGRAM:

SCHOOL:

PREPARED BY: DATE:

CONCISE PROGRAM DESCRIPTION:

PROGRAM ADMINISTRATOR OR DIRECTOR:

PARTICIPATING FACULTY:
(With brief description of the role of each)

REQUIRED COMMITTEES:
(With brief description of the role of each)

ACADEMIC CREDITS INVOLVED:

GENERAL PROGRAM OBJECTIVES:

STUDENTS TO BE SERVED BY PROGRAM:

STUDENT PREREQUISITES:

APPROVALS REQUIRED:

RELATIONSHIP TO OTHER PROGRAMS:

DISSEMINATION OF PROGRAM INFORMATION:

UNITS IN THE PROGRAM:
(Their names, sequence, and general scope)

TIME FRAMES:

PHYSICAL FACILITIES REQUIRED:

COST ESTIMATES:

PROJECTED OUTSIDE SUPPORT:

MAJOR BOUNDARY ELEMENTS:

MAJOR LEARNING STRATEGIES:

MAJOR SCHOOL RESOURCES REQUIRED:

MAJOR COMMUNITY RESOURCES REQUIRED:

COOPERATING AGENCIES/ORGANIZATIONS

OTHER COMMUNITY RESOURCES:

OTHER COMMUNITY INVOLVEMENT:

REQUIRED MEDIA/MATERIALS:

INDEPENDENT STUDENT ACTIVITIES:

REQUIRED EXTERNAL REPORTS:

REQUIRED INTERNAL REPORTS:

REQUIRED PROGRAM RECORDS:

EVALUATION OF STUDENT PERFORMANCE:

PROGRAM REVIEW & EVALUATION:

STUDENT FEEDBACK:

PROGRAM FOLLOW-UP:

OTHER IMPORTANT PROGRAM ELEMENTS:

INTERIM PLANNING SUMMARY

PREPARED BY: DATE:

SUMMARY OF PLANNING ALREADY ACCOMPLISHED:

SUMMARY OF PROGRAM SCHEDULE:

PLAN FOR PROGRAM IMPLEMENTATION

DATE OF ANTICIPATED PROGRAM IMPLEMENTATION:

STEP-BY-STEP PLAN FOR PROGRAM IMPLEMENTATION: (Include such items as faculty orientation, student recruitment, presentations to community and industry, recruitment of industry and community involvement, curriculum implementation, orders for equipment and supplies, implementation of a program schedule, and program review and evaluation).

Part Three

PLANNING THE INDIVIDUAL UNIT

PART THREE: PLANNING THE INDIVIDUAL UNIT

This section centers about the planning of an individual unit in a career education program, including the construction of a lesson plan for it.

PLANNING UNIT OBJECTIVES

1. Before you begin a unit itself, you obviously must know the important details about the total program of which it is a part.

2. Usually one particular item from the list of objectives for the program as a whole will serve as the terminal objective for a given unit.

3. However, when the program objectives are especially lengthy, two or even three of these may be combined into a single unit.

4. For a large unit (i.e., one containing considerable detail or several concepts), more than one terminal objective may be listed --- although as a rule, having only one or two closely related objectives allows the focus of the unit to be more specific, more completely understood and more productive of readily achieved feelings of accomplishment.

5. Terminal objectives may be sub-divided to make them more readily understood or to identify significant steps toward their accomplishment.

6. The following is an example of how such objectives may be established:

In a particular program the overall goal for each student is to pass a written examination for private pilots administered by the Federal Aviation Administration. Several objectives dealing with this in more specific terms can be cited. For instance:

A. The student will demonstrate sufficient knowledge of aviation meterology to make evaluations of present and potential weather conditions likely to affect flight.

B. The student will reveal awareness of how to properly communicate from an airplane to air traffic controllers at flight service stations.

C. The student will demonstrate ability to plan a cross country flight when given appropriate maps and the designated airport locations.

In this example, each of A,B,C etc., serves as a terminal objective for an individual unit. Each of A,B,C etc., can be sub-divided into more specific sub-objectives for the unit.

WRITING UNIT OBJECTIVES

In Section Two (PLANNING THE IMPLEMENTATION OF A PROGRAM), there is a detailed outline regarding the preparation of program objectives. This can also be used in the preparation of unit objectives, since the same principles will apply.

PREPARING A UNIT WORK PLAN

1. Once the objective (or objectives) for a unit can be listed, you are ready to proceed with other specifics related to it.

2. Probably the most convenient way to outline these is to record them on a Work Plan Outline. This simply itemizes all of the major components and steps involved with the unit.

3. This should be prepared in point-by-point form, written concisely and yet in sufficient detail to ensure that all major points have been resolved.

4. We have prepared a Work Plan Outline for you to use with any unit in a career education program. It is at the end of this section.

CONTENTS OF THE WORK PLAN

Here is a minimum list of items to be included in the work plan for a unit of this kind (and you will probably understand it better if you refer to the Work Plan Form at the end of this unit):

UNIT: Here you record the name of this particular unit.

PROGRAM: This space is for the name of the program of which the unit is a part.

STUDENTS: Here you record the name(s) or number(s) of the class(es) for which this unit is intended, as well as the numbers of students involved.

LENGTH OF EACH CLASS: This is the time span provided for each class.

DATES: Here you record the date the unit will begin and the date it will end.

TERMINAL OBJECTIVE: This is a concise measurable statement of the desired outcomes expressed in terms of the individual student.

SPECIFIC OBJECTIVES: Should they be indicated, more specific objectives are presented here. They also should be expressed in measurable terms and according to desired outcomes for the individual student. These should be numbered.

OBJECTIVE NUMBER: Should you have listed specific objectives, their numbers can be used to indicate which of these the listed learning strategies and other material will relate.

STRATEGY: Record concisely in this space the learning strategies to be used in realizing the cited objective.

In order to provide alternate learning strategies, you will be likely to have more than one strategy cited per specific objective.

DISCUSSANT OR RESOURCE PERSON: Persons should be listed here who can contribute to the realization of the objectives involved, whether by serving as discussants, persons to be interviewed, etc. (If films or other media or materials are to be used and no discussants are scheduled, this can be left blank.)

MEDIA/MATERIALS: Cite here by actual name all films, books, outlines, etc., that you intend to use with this particular learning strategy. Whenever possible list by actual title, author, etc., since this will allow your outline to be most helpful, both to others and yourself.

SOURCE: List here the actual source of each designated item of media or other kind of material. To make the work plan one that you can use again at other times (or that others might also use), list the name of each publisher/produces even if you intend to obtain this from your library.

DATE RESERVED: Should you intend to obtain certain materials on a loan basis, list here the date each was reserved for the required period.

INDEPENDENT ACTIVITIES: Here you list the out-of-class activities which students will be expected to complete for this unit. Be specific; include alternates so that adaptations may be made to student's individual skills and interest.

These are the basic items to be included in any work plan for a program unit. Should you wish to include others, these may be outlined on the reverse side of the work plan sheets.

UNIT WORK PLAN FORMS

WORK PLAN FOR A UNIT

Unit: _____ Program: _____

Students: Class: _____ Number: _____

No. of Classes: _____ Length of Each Class: _____

Dates: From: _____ To: _____

Terminal Objective:

Specific Objectives:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Objective Number	Strategy	Discussant or Resource Person	Media/ Materials	Source	Date Reserved

35

Independent Activities:

Part Four

EVALUATING THE PROGRAM AND THE UNIT

PART FOUR: EVALUATING THE PROGRAM AND THE UNIT

There are two principal types of evaluation involved with educational program. The first of these is usually referred to as formative evaluation --- conducted as the program develops and allowing for adjustments to be made in response to specific observations and recommendations. The second of these is the summative evaluation, undertaken when the program is concluded. (Should the program extend over as much as a year, summative evaluations might also be undertaken at the end of each major component, quarter or semester.)

All evaluations of any kind should be scheduled in advance --- and with all those who participate. Such times should not be allowed to pass without the evaluations actually being undertaken. The plan for any program should also cite very specifically the forms, techniques, etc., to be involved in the evaluation process.

In order that real use may be made of the results of periodic evaluations of any program, sufficient flexibility should be built into it so that revisions in materials, changes in strategies, and even adjustments in program goals can be made as these are indicated. As for the summative evaluation, its results should be made available to each person involved in planning the original program, and suggestions solicited for revisions and improvements to be made in future undertakings of this kind.

PROGRAM AND UNIT EVALUATIONS

In the kinds of programs which are the subject of this guide, the formative kind of evaluation is most likely to be undertaken at the end of each unit. What is learned from the evaluation of any particular unit then can be applied to the management of units that follow.

Most programs of the kind under discussion here will extend over a semester or a quarter. The end of such a period is an appropriate time to make a summative evaluation of the entire program. Should the program extend over a year, interim summative evaluations can also be undertaken at the end of each semester or quarter.

In later pages of this section there are forms to be used in both formative and summative evaluations. The summative (program) evaluation form also may be used at any point when a program evaluation is required.

BASIC QUESTIONS IN ANY EVALUATION

Below are twelve basic questions inherent to any kind of evaluation:

1. Are the objectives of the program accomplished with most participants?

2. Are the objectives stated in sufficiently measurable terms that it is possible to establish this with reasonable certainty?

3. Do employers in the field find the program objectives reasonable and up-to-date?

4. Are students able to understand and relate to these objectives?

5. Are resource people able to understand and relate to these objectives?

6. Are the objectives reasonable in terms of the time available for the program?

7. Are appropriate, up-to-date and interesting resource media and other materials available for the program?

8. Is the program geared to local and regional, as well as national, employment and career circumstances?

9. Is the program flexible enough to allow for use of expert, up-to-date and creative input?

10. Is the program flexible enough to respond to student interest and input?

11. Does the operation of the program permit broad participation in decision making?

12. Does the operation of the program permit the use of varied and appropriate learning strategies?

This does not by any means constitute a complete list of questions you will need to consider in evaluating any particular program or individual unit. According to the nature of the program or unit involved, you will want to add others. But this is at least a basic list of questions that need to be addressed and, hopefully, they will stimulate your thinking of others related to your particular program.

EXPECTATIONS FOR ANY PROGRAM

Our expectations for any program have a very important role in the process of evaluation. Not only do they enter into our evaluation of every other aspect of a program, but the evaluation of the program should also examine the basic expectations themselves. Have we established reasonable expectations? Are they based on reasonable assumptions? Are they related to reasonable conceptions about the abilities of all persons involved?

Obviously this is a very complex matter, and it is important that we identify all of the elements relating to expectations which can enter into the process of evaluation. The following is a list of matters concerning our program expectations which need to be looked at in any process of evaluation:

Are our expectations reasonable in terms of:

1. Time requirements
2. What can be accomplished in these time periods
3. Students' abilities
4. Relationship of program benefits to program costs
5. Availability of equipment and materials
6. Faculty preparation and orientation
7. Faculty comprehension and acceptance of objectives
8. Student comprehension and acceptance of objectives
9. Employer needs
10. Identification and availability of industry support
11. Availability of employment
12. The commitment, time and energy of everyone involved.

THE EVALUATION OF MEDIA AND MATERIALS

As you develop your program, you will be working with media and other materials which you will obtain from a wide variety of sources. The evaluation of such materials is an integral part of any kind of program review. Frequently faculty members find themselves lacking any kind of list which they can use in conducting such an evaluation. Therefore we are presenting the following list of factors to consider when undertaking any media/materials evaluation in a program of career education:

Completeness of the Materials

1. No evident omissions.
2. Topics handled in equivalent detail from one career to another.
3. So complete as to be readily usable.
4. Comprehensive enough that when necessary, can be used as introductory material.

5. Includes identification of a good quantity of needed resource materials.
6. Also includes sources of the above resource materials.
7. Spells out minimum goals for each program.
8. Based on materials that realistic and readily available.

Rationale and Integrity

1. Written in accordance with present concepts of career education.
2. Adaptable to changes which may occur in concepts of career education.
3. Based on concepts and objectives which are compatible with those of the program or unit.
4. Possesses validity, especially in terms of truthful depiction of all career conditions.
5. Written and edited in a way to meet real needs of administrators, teachers, counselors and students.
6. Written and edited in a way geared to conditions in the transportation industry.

Relevance and Appropriateness

1. All materials appropriate for grades, ages, and levels involved.
2. All materials under each heading appropriate to that heading.
3. As up to date as possible in terms of career conditions, employment possibilities, career ladders, etc.
4. Geared to present days interests of students and occupation/industry needs.
5. Applicable to vocational and traditional schools alike.
6. End results likely to win employer and job market acceptance.

Flexibility

1. Allows for individual program and teacher adaptation of all materials.
2. Allows for creative input from students involved.
3. Allows for interpretation of, and adjustment to, local or regional requirements.

Organization and Clarity

1. Materials c tlined in readily understandable terms, especially on the part of persons not previously acquainted with career education.

2. Materials organized in a way that provides for maximum use and understanding (by both teachers and students).
3. From one career outline to another, materials organized in consistent fashion.
4. Avoidance of overly-technical terms.

MISCELLANEOUS CONSIDERATIONS

Every program is unique. Even when your program includes a unit common to many other programs, there will be unique features that will develop in it.

Your evaluation process should reflect a recognition of this fact. On the succeeding pages are forms suitable for use in both program and unit evaluation in any career education program. But it should be recognized that these forms provide only the basic kinds of data involved with evaluation. You may well want to add to them to meet your own individual program evaluation requirements.

PROGRAM AND UNIT EVALUATION FORMS

On the succeeding pages are forms to be used in the evaluation of an individual unit and also for the evaluation of a total program or a major program component.

Unit Evaluation Forms

1. There are 30 copies of this form included in this guide.
2. One of these forms should be completed at the conclusion of each unit.
3. Before filling in each form, place a carbon between it and the next form.
4. Cut along the line at the left of either the the original or the carbon copy. Send this detached copy to: Transportation Curriculum Project, Division of Vocational Education, Ohio Department of Education, 85 East Gay Street, Suite 708, Columbus, Ohio 43215.
5. The other copy is for your own records. It can be retained in this guide or detached to be filed in the records for your program.
6. Your cooperation in sending a copy of each such evaluation to the Transportation Curriculum Project will be very much appreciated and will enable this office to make necessary improvements and revisions in any of the materials which it has issued.
7. The Transportation Curriculum Project will supply you with additional copies of these forms as you need them.

Program Evaluation Forms

1. There are 12 copies of this form included in

this guide.

2. One of these forms should be completed at the mid-point with your program and also at the end of the program. (Should your program extend over an academic year, one of these forms should be completed at the conclusion of each three month period.)

3. Before filling in each form, place a carbon between it and the next form.

4. Cut along the line at the left of either the original or the carbon copy. Send this detached copy to: Transportation Curriculum Project, Division of Vocational Education, Ohio Department of Education, 85 East Gay Street, Suite 708, Columbus, Ohio 43215

5. The other copy is for your own records. It can be retained in this guide or detached to be filed in the records for your program.

6. Your cooperation in sending a copy of your program evaluations to the Transportation Curriculum Project will be very much appreciated and will be most helpful in the revision of the program materials which it has issued.

7. The Transportation Curriculum Project will supply you with additional copies of these forms as you need them.

Special Note

Should you find it difficult to mail individual unit evaluations to the Transportation Curriculum Project as each is completed, the Project Director requests that you mail accumulated evaluations to him by the following dates:

December 15, 1975
March 15, 1976
June 15, 1976

UNIT EVALUATION FORMS

USING THE UNIT EVALUATION FORM

You have previously identified a terminal objective and specific objectives for each unit. You now need to consider the evaluation of the learning strategies employed as the students moved through the unit.

In order to accomplish this, you need to complete an evaluation form at the end of each unit. The form outlined here is relatively simple and easy to use.

INSTRUCTIONS FOR COMPLETING THE EVALUATION FORM

1. Be certain to fill in each space at the top of the form.
2. Enter the number of the specific objective in the space provided to the left. Enter a number for each objective you have included as part of the unit.
3. There are four columns to the right of the space in which you enter the objective numbers. Each column corresponds to a strategy you employed for a specific objective.
4. In each of these columns, rate the effectiveness of each strategy by circling one of numbers 1-2-3, according to these definitions: 1 = very effective, 2 = effective and 3 = less than effective.
5. At the bottom is the title "Terminal Objective." You have identified a terminal objective for this unit and now you need to rate the effectiveness of each strategy in achieving this terminal objective.
6. If you have additional comments enter them on the reverse side of the form.

cut along this line

UNIT EVALUATION

TITLE OF PROGRAM _____ INSTRUCTOR'S NAME _____

TITLE OF UNIT _____ NAME OF INSTITUTION _____

GRADE LEVEL _____ DATE _____

OBJECTIVE NUMBER	DISCUSSANT OR RESOURCE PERSON	MEDIA/ MATERIALS	ASSIGNED INDEPENDENT ACTIVITIES	STRATEGIES EMPLOYED
1	1 2 3	1 2 3	1 2 3	1 2 3
2	1 2 3	1 2 3	1 2 3	1 2 3
3	1 2 3	1 2 3	1 2 3	1 2 3
4	1 2 3	1 2 3	1 2 3	1 2 3
5	1 2 3	1 2 3	1 2 3	1 2 3
6	1 2 3	1 2 3	1 2 3	1 2 3
7	1 2 3	1 2 3	1 2 3	1 2 3
8	1 2 3	1 2 3	1 2 3	1 2 3
9	1 2 3	1 2 3	1 2 3	1 2 3
10	1 2 3	1 2 3	1 2 3	1 2 3
Terminal Unit Objective	1 2 3	1 2 3	1 2 3	1 2 3

Note: Use the reverse side of this sheet for additional comments

PROGRAM EVALUATION FORMS

USING THE PROGRAM EVALUATION FORMS

Now that you have completed your program, it is time to complete the Program Evaluation Form. The purpose of this form is to determine the effectiveness of the program in achieving its objectives and goals.

This form is in two parts. The first is very much like the form you completed when you evaluated a unit. The major difference is that now you are evaluating the effectiveness of the units instead of the objectives. In doing this, you should consider the success of each strategy in contributing to the success of the unit.

Obviously you have employed many strategies within the unit --- perhaps several for a single objective. Therefore when considering the success of the strategies employed, think it in terms of all of them that were utilized in a particular unit.

INSTRUCTIONS FOR COMPLETING THE PROGRAM EVALUATION FORM - I

1. Be certain to fill in each space at the top of the form.
2. Enter the numbers of the units included in the program in the space provided to the left. Enter a number for each unit that was part of the program.
3. There are four columns to the right of the space in which you entered the unit numbers. Each column represents a strategy that you employed in the individual units. In each of these columns rate the effectiveness of each of these strategies in contributing to the success of the unit. In rating the effectiveness of each strategy, circle one of the numbers 1-2-3 according to the following definitions: 1 = very effective, 2 = effective and 3 = less than effective.
4. At the bottom is the word "Program." You need to rate each strategy as you feel it has been effective in the success of the entire program.
5. If you have additional comments enter them on the reverse side of this form.

The second part of the program evaluation form is designed to evaluate the effectiveness of certain other important elements in any career education program.

The form requires that you consider the effectiveness of each of these elements, both in relation to planning and implementation. If you will follow the directions listed below you should have no difficulty in completing this form.

INSTRUCTIONS FOR COMPLETING THE PROGRAM EVALUATION FORM - II.

1. Be certain to fill in each space at the top of the form.

2. There are two columns to the right of the list of program elements. One of the columns relates to the planning stage and the other relates to the implementation stage.

3. In each of these columns, rate the effectiveness of each element in contributing to the success of the program. Do this by encircling one 1-2-3 of the numbers (or NA if it does not apply), according to the following definitions:

1 = very effective, 2 = effective, 3 = less than effective

NA = not applicable. (The not applicable category merely signifies that you did not employ this element or strategy in the operation of this particular program.)

3. If you have additional comments enter them on the reverse side of the form.

cut along this line

PROGRAM EVALUATION - I

TITLE OF PROGRAM _____ INSTRUCTOR'S NAME _____

NUMBER OF UNITS _____ NAME OF INSTITUTION _____

GRADE LEVEL _____ DATE _____

UNIT NUMBER	DISCUSSANT OR RESOURCE PERSONS	MEDIA/ MATERIALS	ASSIGNED INDEPENDENT ACTIVITIES	OTHER STRATEGIES EMPLOYED
1	1 2 3	1 2 3	1 2 3	1 2 3
2	1 2 3	1 2 3	1 2 3	1 2 3
3	1 2 3	1 2 3	1 2 3	1 2 3
4	1 2 3	1 2 3	1 2 3	1 2 3
5	1 2 3	1 2 3	1 2 3	1 2 3
6	1 2 3	1 2 3	1 2 3	1 2 3
7	1 2 3	1 2 3	1 2 3	1 2 3
8	1 2 3	1 2 3	1 2 3	1 2 3
9	1 2 3	1 2 3	1 2 3	1 2 3
10	1 2 3	1 2 3	1 2 3	1 2 3
Program	1 2 3	1 2 3	1 2 3	1 2 3

Note: Use the reverse side of this sheet for additional comments

cut along this line

PROGRAM EVALUATION - II

TITLE OF PROGRAM _____ INSTRUCTOR'S NAME _____

NAME OF INSTITUTION _____ GRADE LEVEL _____

GRADE LEVEL _____

Program Element	Planning	Implementation
Acceptance of the program by the institution	1 2 3 NA	1 2 3 NA
Involvement of community in program planning	1 2 3 NA	1 2 3 NA
Acceptance of the program by the community	1 2 3 NA	1 2 3 NA
Effectiveness of any committees	1 2 3 NA	1 2 3 NA
Acceptance of the program objectives	1 2 3 NA	1 2 3 NA
Relationship of units to program objectives	1 2 3 NA	1 2 3 NA
Identified relationships to other programs	1 2 3 NA	1 2 3 NA
Appropriateness of time frames	1 2 3 NA	1 2 3 NA
Appropriateness of major learning strategies	1 2 3 NA	1 2 3 NA
Resource identification	1 2 3 NA	1 2 3 NA
Media/materials	1 2 3 NA	1 2 3 NA

Note: Use the reverse side of this form for comments

SPECIAL NOTE

Included in this guide are a number of forms to be used in program planning, unit planning, program evaluation and unit evaluation.

The evaluation forms have been designed to allow you and your faculty to evaluate both programs and units and to forward to the Transportation Curriculum Project information which it will find helpful in evaluating the project and curriculum materials which it has published.

You may wish to also use these forms in the evaluation of both individual units and major program components by your faculty, students, consultants, resource persons, and so on. These outlines have been developed with the idea that you can readily adapt them for use by such persons and for your own internal requirements. Please feel free to use these forms in any way that will be helpful.